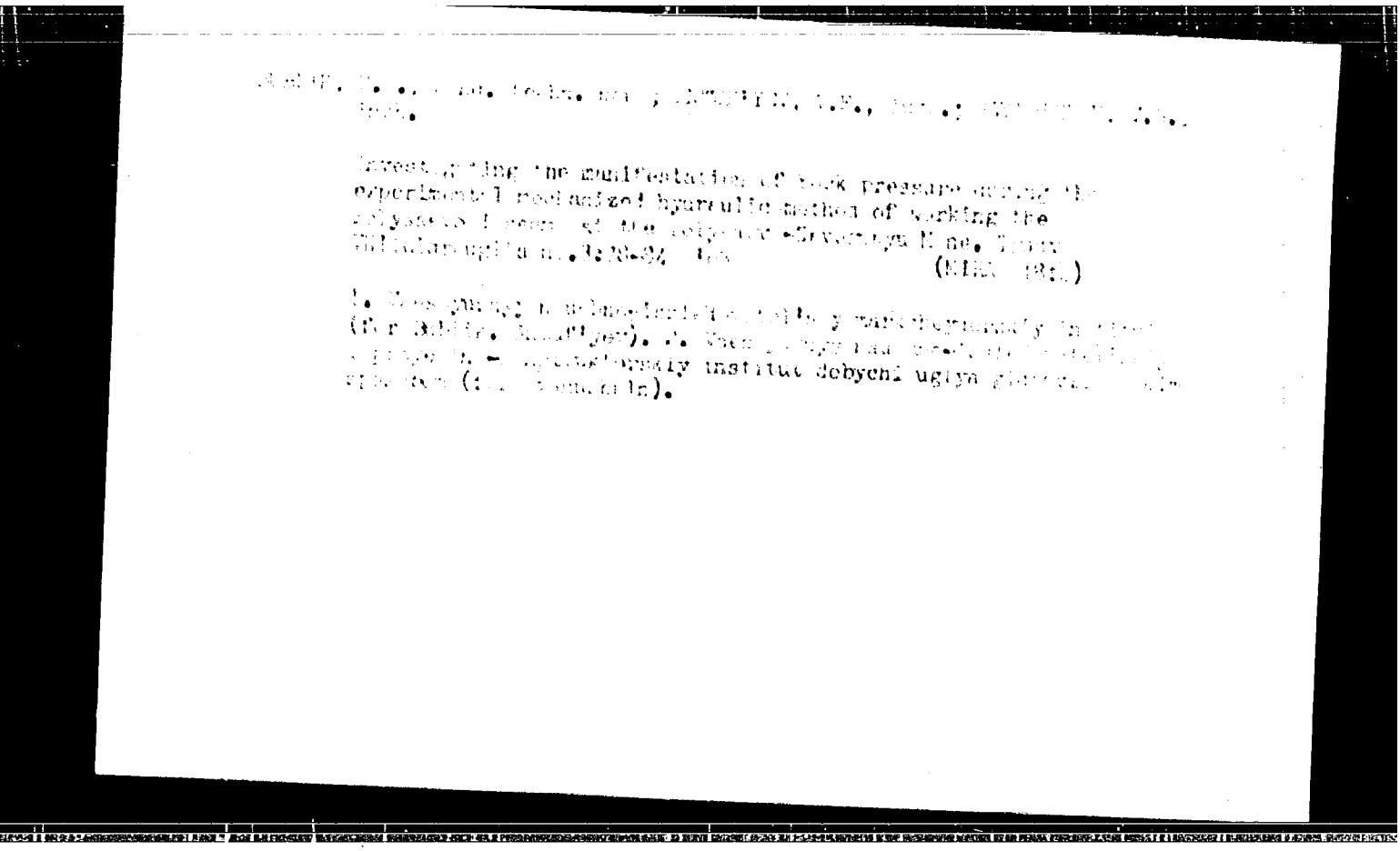
BUBLIK, F.P., kand. tekhn. nauk; ANTUF'YEV, V.F., inzh.

Characteristics of the manifestation of bearing pressure while mining flat seams using the hydraulic method. [Trudy] VNIMI no.47:3-9'62 (MIRA 17:7)



ANTUFIEV, V. M.

ANTUFYEV, V.M.

EXPERIMENTAL INVESTIGATION OF THE ACTION OF SUCTION PYROMETERS. V. M. ANTUFIEV AND K. A. BLINOV (IZVESTIA VSESOUZNOGO TEPLOTEKHNICHESKOGO INSTITUTA (BULL. PAN UNION THERMOTECH. INST) 1936, (11) 40-44)(In Russian) From theoretical calculations and experimental curves of the relation of temperature to the rate of gas-flow the mistakes arising during measurements with suctio n pyrometers with ceramic shields may for practical purposes be corrected with sufficient accuracy by the same theoretical formulae as for metallic shields.N.A. Immediate source clipping

ANTUF'YEV, V. M.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 284 - I

BOOK

Call No.: TJ265.T4

Authors: ANTUF'YEV, V. M., Kand. of Eng. Sc. and Beletskiy, G. S., Kand of Eng. Sc.
Full Title: HEAT TRANSMISSION AND RESISTANCE OF FIN HEATING SURFACES
Transliterated Title: Teoloperedacha i soprotivleniye plavnikovykh poverkhnostey nagreva

Publishing Data

Originating Agency: Ministry of the Heavy Machine-Building Industry (Glavkotloturboprom). Central Scientific Research Inst. of Boilers and Turbines im. I. I. Polzunov. (TsKTI). This article is from a series teploperedacha i aerogidrodinamika (Heat Transmission and Aero-Hydrodynamics), book 2, issue 1, pp. 28-35.

Publishing House: State Scientific and Technical Publishing House of Literature on Machine Building. (Mashgiz)

Date: 1947

Editorial Staff

No. of copies: 3,000

Editor: Shubenko, L. A., Laureate of Stalin Prize, Kand of Eng. Sc.

Tech. Ed.: None

Editor-in-Chief: Fetisov, F. I., Leningrad Div. of Mashgiz

Appraisers: None

Text Data

Coverage: The effects of fin surfaces are studied for practical coefficients

1/2

Teploperedacha i soprotivleniye plavnikovykh AID 284 - I

obtained in computation of heat transmission coefficients and aerodynamic resistance factors in boiler and economizer installations. The author's experimental data are applied as correction factors for Nusselt value Nu. 12 charts.

Data and curves presented may be used in designing of the fin heating surfaces.

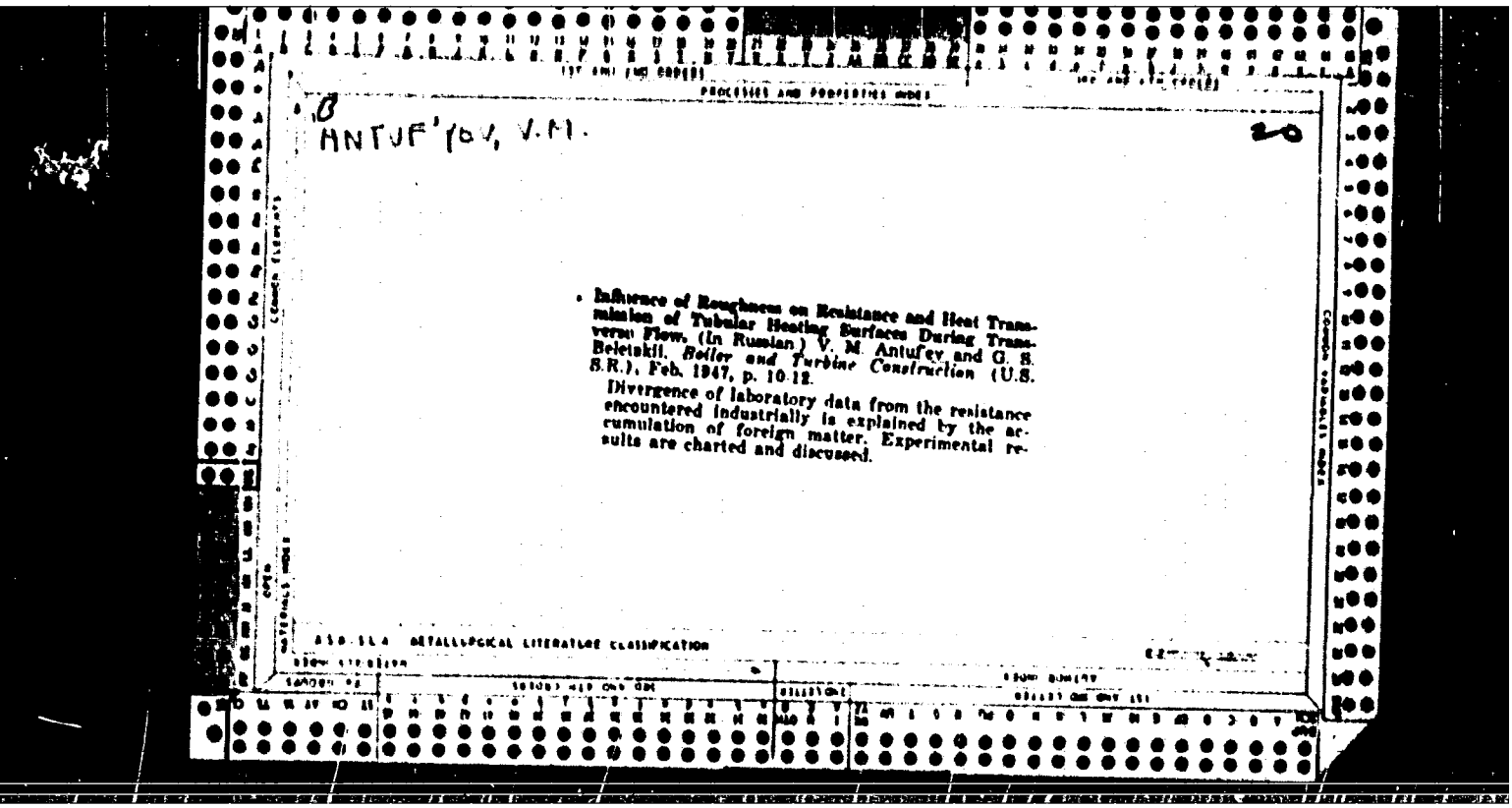
Purpose: Obtaining practical correction factors for design formulas.

Facilities: Central Scientific Research Inst. for Boiler and Turbines im. I. I. Polzunov. (TsKTI) and All-Union Heating Engineering Inst. im. F. E. Dzerzhinskiy. (VTI)

No. of Russian References: None

Available: Library of Congress

2/2

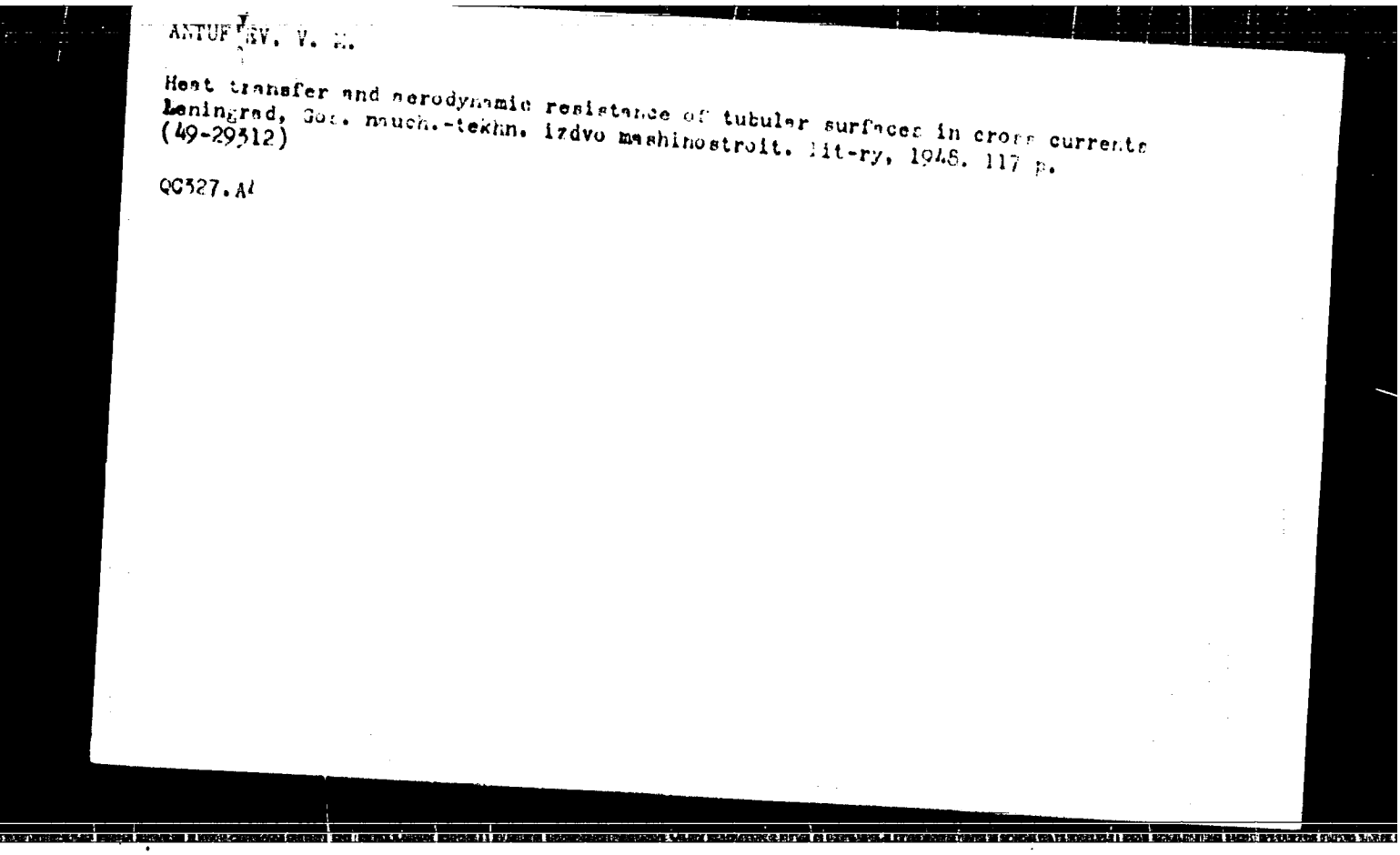


B
ANTUF'EV, V.M.

20

• Influence of Roughness on Resistance and Heat Transmission of Tubular Heating Surfaces During Transverse Flow. (In Russian.) V. M. Antufev and G. S. Beletskii. *Boiler and Turbine Construction* (U.S.S.R.), Feb. 1947, p. 10-12.

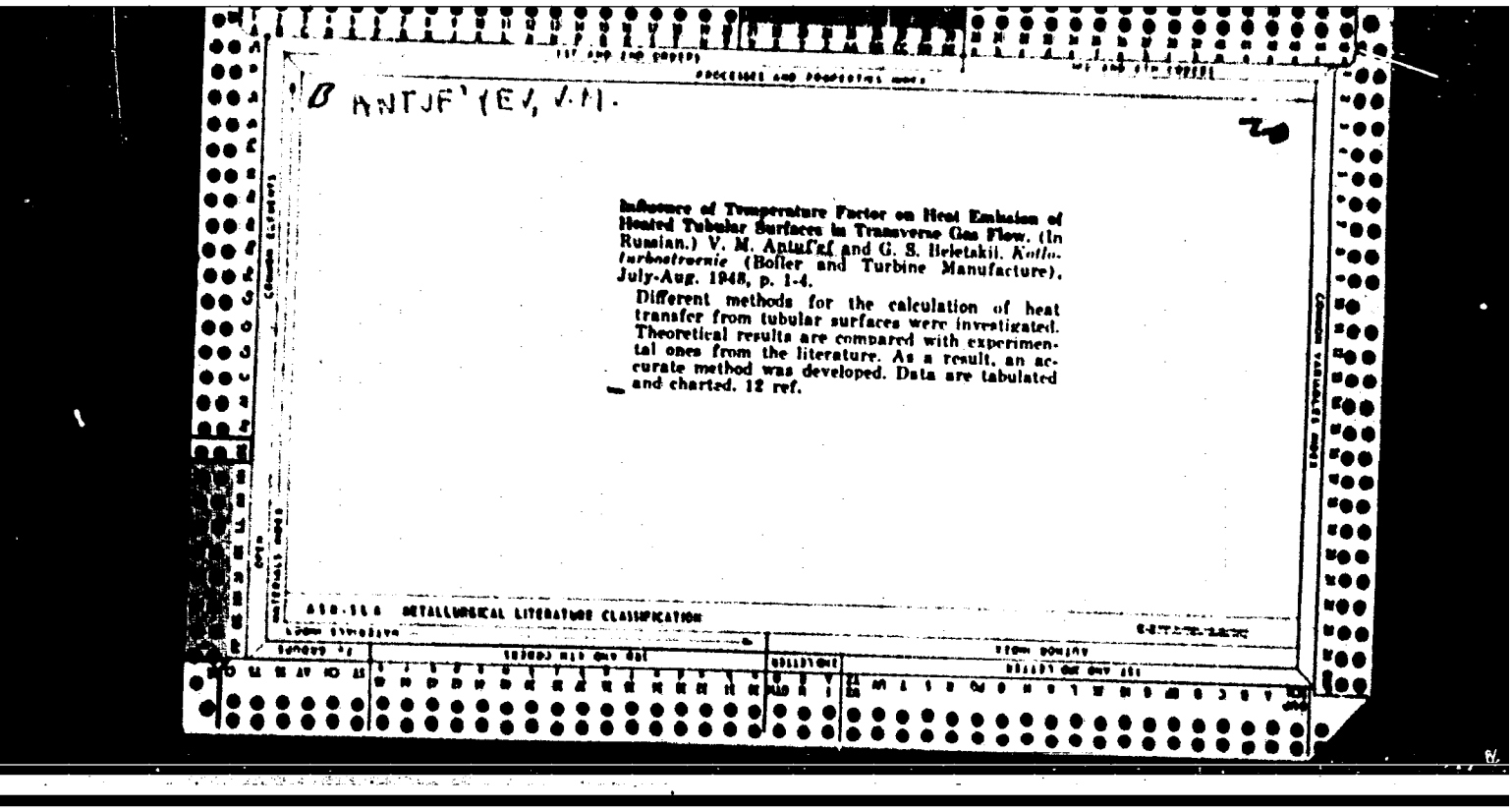
Divergence of laboratory data from the resistance encountered industrially is explained by the accumulation of foreign matter. Experimental results are charted and discussed.



ANTUF'YEV, V. M.

Heat transfer and aerodynamic resistance of tubular surfaces in cross currents
Leningrad, Gos. nauch.-tekhn. izdvo mashinostroit. lit-ry, 1948. 117 p.
(49-29512)

QC327.A1



ANTUF'EV, V.M.

Influence of Temperature Factor on Heat Emission of Heated Tubular Surfaces in Transverse Gas Flow. (In Russian.) V. M. Antuf'ev and G. S. Beletskii. *Kotlo-turbostroenie* (Boiler and Turbine Manufacture), July-Aug. 1948, p. 1-4.

Different methods for the calculation of heat transfer from tubular surfaces were investigated. Theoretical results are compared with experimental ones from the literature. As a result, an accurate method was developed. Data are tabulated and charted. 12 ref.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Subject : USSR/Heat Engineering AID P - 4357

Card 1/1 Pub. 110-a - 2/19

Author : Antuf'yev, V. M., Kand. Tech. Sci. Nevskiy Machine Building Plant

Title : Heat transfer and thermal resistance in stacks of corrugated sheets heated by flowing fluid.

Periodical : Teploenergetika, 4, 5-10, Ap 1956

Abstract : Results of research on heat exchangers composed of welded corrugated sheets stacks of different shapes and dimensions are reported. A theoretical analysis for the computation of heat transfer from the vertical and horizontal flows to the corrugated sheets is given. Eleven diagrams. Three Russian references, 1944-1952 and two English, 1950-1952.

Institution : None

Submitted : No date

NAREZHNYY, M.G.; ANTUF'YEV, V.M., dotsent, kand.tekhn.nauk, nauchnyy rukovoditel'.

[Research on heat exchange in a gas turbine combustion chamber with a cool air swirler; author's abstract of a dissertation for the degree of candidate in the technical sciences] Issledovanie teploobmena v gazoturbinnoi kamere sgoraniia s zavikhritelem okhlazhdaiushchego vozdukha; avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata tekhnicheskikh nauk. Nauchn.ruk. V.M. Antuf'ev. Leningrad, Leningr.korablestroitel'nyi in-t, 1958. 16 p. (MIRA 12:9)

(Gas turbines)

S/114/61/000/002/002/007
E194/E255

AUTHOR: Antuf'yev, V. M., Candidate of Technical Sciences

TITLE: Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

PERIODICAL: Energomashinostroyeniye, 1961, No. 2, pp. 12-16

TEXT: Finned surfaces are widely used in gas-liquid heat-exchange equipment. The most complete and systematic investigations of tube bundles relate to tubes with wire fins and tubes with relatively thin fins. The optimum proportions of fins have been calculated. For many other types of surfaces used in heat-exchange equipment the fin proportions are selected on the basis of constructional or manufacturing considerations and are not always the best. Recently, TsNIIT Mash has developed a new way of making tubes with fully drawn fins. With this method of manufacture reliable contact is obtained between fin and tube, and expensive metal is not required for brazing. A number of different types of finned surface are now available and the object of this article is to report upon comparative heat-exchange tests on them. The tests were made in a rig described in an article by the author (Ref. 5).

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S/114/61/000/002/002/007
E194/E255

Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

The tube bundles to be investigated were installed in a wind tunnel. Water at a temperature of 90 to 98°C was circulated through the tubes. Special precautions were taken to avoid heat loss to the surroundings. The instrumentation and procedures are briefly described. Heat-transfer coefficients on the water side were raised to 20 000 kcal/m^{2}hr by using helical baffles in the tubes. Under these conditions the temperature of the main tube surface is practically the same as the water temperature. The experimental results on heat transfer and resistance were plotted in the form of graphs of Nu = f(R^e) and Eu = f(R_e). The surfaces were compared on the basis of Kirgichev's energy coefficient E = q/An, where q is the amount of heat removed from the surface, and An is the power required to overcome resistance, expressed in thermal units. In determining the amount of heat it is necessary to assume a temperature difference which of course depends on the flow arrangement. Instead, a slightly different form of representation of the energy coefficient may be used to assess the efficiency of a surface. A

Card 2/6

S/114/61/000/002/002/007
E194/E255

Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

revised method of expressing these energy coefficients is then given and is very convenient for characterizing the effectiveness of cooling surfaces under the conditions considered. It is found that surface No. 3 has the poorest thermal characteristic as it has long steel fins about 3 diameters high, which are inefficient. Surfaces Nos. 1, 2 and 4 are practically equivalent but No. 2 has some advantages at high gas speeds. The surfaces were assessed for space occupied on the basis of a given removal of heat for the same power consumption on resistance. Under these conditions the effectiveness of the surface depends on its efficiency and compactness. The method of calculating is explained and the results are plotted. It is shown that surface No. 1 has the smallest size and weight because it has very thin fins which are closely packed on the surface of the tube. On the other hand, in respect of both thermal and aerodynamic properties this surface has no advantages over surfaces Nos. 2 and 4. They will give as good a result if the thickness of their fins is made the same as those of surface No. 1.

Card 3/6

S/114/61/000/002/002/007
E194/E255

Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

Surface No. 5 has somewhat worse characteristics although the shape of the tube and the thickness of fins is the same as for surface No. 1. This is probably because the tubes are in square arrangement in the bundle. According to present data and to investigations of the All-Union Heat Engineering Institute the surfaces with wire fins have the worst characteristics. On the basis of the results it is concluded that round tubes with coiled wire fins give the worst results and are not recommended for new designs. There is little difference between the thermal and aerodynamic properties of surfaces 1, 2, 4 and 5, the shape of the tube and the fin have little influence on the process of heat exchange. On the basis of these results it appears advisable in developing new heat exchange equipment with finned surfaces to recommend tubes with fully drawn spiral fins of TsNIIT Mash, the production of which is mechanized and does not require brazing. Acknowledgements are made to R. I. Mesh for his assistance. There are 3 figures, 2 tables and 6 Soviet references.

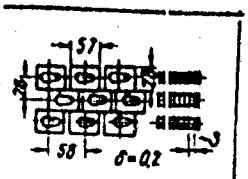
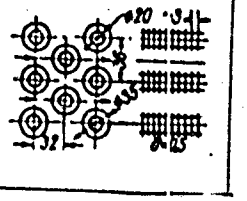
Card 4/6

S/114/61/000/002/002/007
E194/E255

Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

Table 1

Characteristics of Finned Surfaces

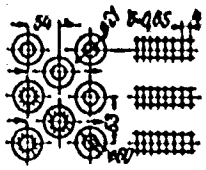
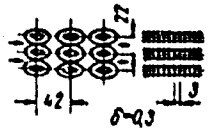
1	A bundle of tubes of egg-shaped section, with rectangular fins	
2	Round tubes with fully-drawn spiral fins of TsNIITMASH	

Card 5/6

S/114/61/000/002/002/007
E194/E255

Comparative Investigations of Heat Transfer and Resistance of Finned Surfaces

Table 1

3	Bundle of round tubes with spiral strip fins	
4	Round tubes with wire fins	
5	Oval tubes with spiral strip fins of the NIIKIMASH	

Card 6/6

ANTUF'YEV, V.M.

Effect of the temperature conditions of a stream and a wall on heat exchange in liquid flow in drops across a cluster of pipes. Inzh.fiz.zhur. 4 no.7:25-29 Jl '61. (MIRA 14:8)

1. Tekhnologicheskiy institut tsellyulozno-bumazhnoy promyshlennosti, Leningrad.

(Heat—Transmission)

S/145/62/000/010/004/006
D263/D308

AUTHOR: Antuf'yev, V.M., Candidate of Technical Sciences, Docent

TITLE: Experimental investigation of the effect of the temperature factor on heat exchange in transverse flow through a set of tubes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 10, 1962, 117-127

TEXT: The effect of the temperature factor for both directions of heat flow is investigated on a special installation in the form of a return flow wind tunnel in which a checkered arrangement of aluminum pipes is located. A specially designed water calorimeter is used for heat exchange measurements. The analysis of the experimental results shows that for an increase of surface temperature from 35 to 150°C the coefficient of heat transfer increases by 10 - 15%, and the direction of heat flow has no substantial effect on heat exchange. Temperatures of stream and walls affect heat exchange

Card 1/2

Experimental investigation ...

in the same degree. There are 5 figures and 5 tables.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Politechnic Institute)

Card 2/2

ANTUF'YEV, V.M., kand.tekhn.nauk; GUSEV, Ye.K., inzh.

Determining the optimum speeds of a two-way gas flow by the energy characteristics. Trudy LTITSBP no.11:152-158 '62. (MIRA 16:10)

ANTUF'YEV, V.M., kand. tekhn. nauk

Reply to IA. L. Polynovskii's remarks. Energomashinostroenie 9 no.7:44 Jl '63. (MIRA 16:7)

(Surfaces (Technology)) (Polynovskii, IA.L.)

AUTHOR: Antuf'yev, ...

TITLE: The prob... between heat transfer ... tance to the heating surface

SOURCE: Inzhenerno-fizich... y zhurnal, no. 11, 1964, 3-9

TOPIC TAGS: heat transfer, surface roughness coefficient, Reynolds number, Nusselt number, Prandtl tube/ PP potentiometer

ABSTRACT: The behavior of heat transfer and resistance during the flow of a fluid through rough pipes ... with varying ... by ... constant current meter. The te... provided for the experiment. The pipe ... canal fitted around it. The water was heated ... and moved at a speed of 4 to 5 meters/sec. The temperatures were measured by thermocouples, using PP potentiometers, and the air flow was measured by a Prandtl tube with 3-mm diameter. It was found that in the ... of the Reynolds ... where the small protrusions on the surface of the tube ... the ... was

Card 1/2

L 11927-65
ACCESSION NR: AP4040044

governed mainly by the surface area of the protrusions and [illegible] their relative height or shape. [illegible] the N [illegible] number [illegible] by the formula $N_1 = 0.0045\varphi Re^{0.8}$ [illegible] 0.0275 φ [illegible] table.

ASSOCIATION: Tekhno[illegible] institut [illegible]

SUBM [illegible]

SUB CODE: TD NO REF SOV: [illegible] OTHER: [illegible]

Card 2/2

[illegible], V.A.; Gos[illegible], Y.K.

Effect of the transverse flow turbulence on the heat transfer and resistance of pipe bundles with transverse and spiral ribs. Trudy LKTMBP no.14:[illegible] '64.

Selecting the surface type for [illegible]. Ibid.:142-150

Heat transfer and resistance of pipe bundles with longitudinal ribs in a transverse flow. Ibid.:151-[illegible] (MIRA 17:5)

ACCESSION NR: AP4038899 S/0114/64/000/005/0009/0013

AUTHOR: Antuf'yev, V. M. (Candidate of technical sciences, Docent)

TITLE: Comparative studies of convective surfaces on the basis of energy characteristics

SOURCE: Energomashinostroyeniye, no. 5, 1964, 9-13

TOPIC TAGS: heat transfer, convective heating, heat exchanger, gas turbine, aircraft intercooler

ABSTRACT: The thermal efficiency of convective surfaces is evaluated by the power used to overcome the resistance per unit of heat-exchange area. The thermal efficiency of these surfaces is estimated (using the author's formulas published elsewhere) for longitudinal-flow and cross-flow conditions for these (cross-section) tube shapes: lentil, drop, oval, fish-fin, irregular, oval-like. Formulas for Nu, Eu, compactness coefficient (surface per unit volume), and

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ACCESSION NR: AP4038899

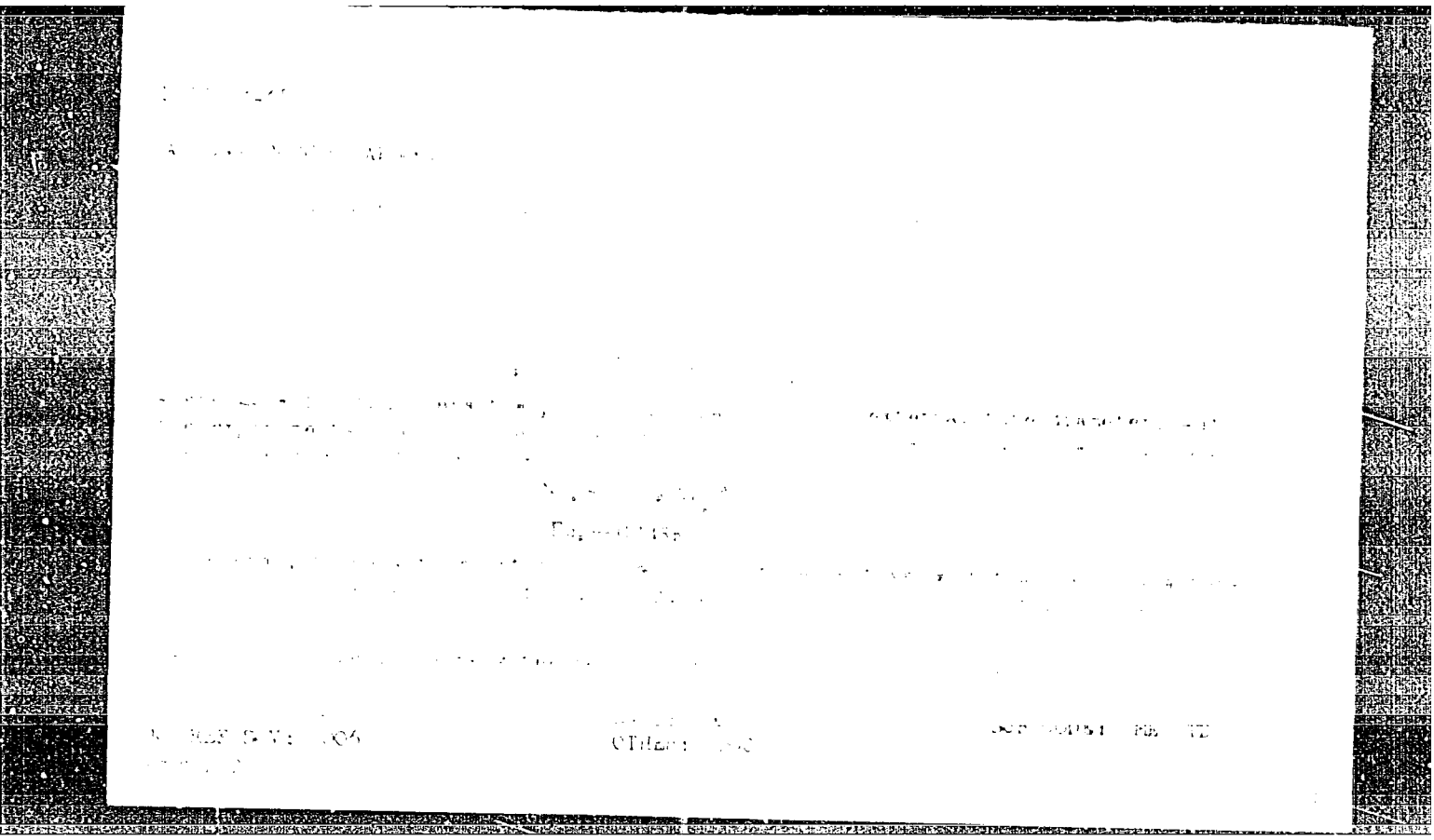
thermal efficiency are given for all of the above-mentioned shapes. Complicated shapes have some advantages over round tubes: their heat-transmission factor is higher than that of the most efficient round-tube staggered bank by 10-20%. The thermal efficiency of rough surfaces is found to be much higher than that of any smooth surface; with properly shaped ribs, the heat transfer of a rough surface may be increased by several times. Orig. art. has: 3 figures, 14 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 05Jun64	ENCL: 00
SUB CODE: TD, PR	NO REF SOV: 007	OTHER: 002

Card 2/2

Card 1/2



ANTUF'YEV, V.M., kand. tekhn. nauk, dotsent; GUSEV, Ye.K., inzh.

Study of the wear of cylindrical cast iron bushings during the breaking-in of diesel engines using a radioactive tracer method. Energomashinostroenie 11 no.6:9-12 Je '65. (MIRA 18:7)

Heat emission and resistance of profile heating surfaces. Ibid.:7-9

ANTUF'YEV, V. V.

1963

Radiation
Nuclear Physics

c. '62

L 20684-66 EWT(1)/ETC(m)-6 IJP(c) WW/JXT(CZ)
ACC NR: AT6004861 SOURCE CODE: UR/2563/65/000/255/0162/0165

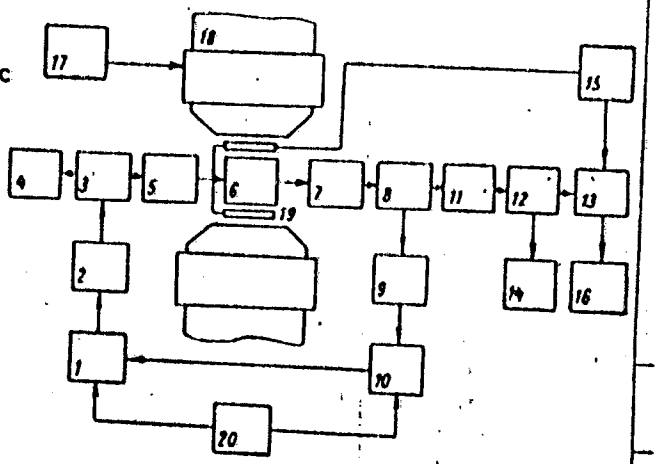
AUTHOR: Antuf'yev, V. V.; Votinov, M. P.; Shelekhin, Yu. L.

ORG: none

TITLE: Electronic paramagnetic resonant spectrometer for the millimeter band

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 255, 1965. Radioelektronika (Radio electronics), 162-165

TOPIC TAGS: EPR spectrometer, spectrometry



ABSTRACT: The construction of a 36-Gc (λ = 8 mm) EPR spectrometer (supplementing an older 9-Gc type) is reported. The new spectrometer intended for analyzing the complex spectra of polycrystals has been developed along the lines of the standard RE1301 type; it has a power detector and uses a "small" modulation of the magnetic field. Klystron 8-mm oscillator 1 (see figure) via attenuator 2, directional coupler 3,

Card 1/2

L 20684-66

ACC NR: AT6004861

and phase shifter 5 excites silver-plated brass resonator 6 (its Q = 8000). After the resonator, the energy is detected by crystal detector 8. The klystron frequency is stabilized by an AFC system, which consists of a 10-kc reference-voltage oscillator 20, amplifier 9, and phase detector 10; the AFC system keeps the klystron frequency constant within 0.001%. The use of 10-kc frequency, instead of the conventional 460 kc, permitted reducing the modulation broadening of lines. The new spectrometer has a sensitivity of 10^{13} unpaired electrons in the specimen. Spectral curves of T-900 and $BaTiO_3$ ceramics taken on both spectrometers clearly show the better resolution of the new instrument. Orig. art. has: 2 figures. [03]

SUB CODE: 20, 09 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 002

ATD PRESS: 4223

Card 2/2

ANTUF YEV, Yu.P.

Category : USSR/Nuclear Physics - Nuclear Reactions C-5

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6053

Author : Tsytko, S.F., Antuf'ev, Yu.P.
Inst : Physical-Technical Institute, Academy of Sciences, Ukraine SSR.
Title : Resonances in Reactions of Proton Capture by Silicon Isotopes

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 6, 1171

Abstract : A study of the reaction Si (p, γ) P is reported. The investigations were carried out with an electrostatic generator and the proton energy ranged from 500 to 2600 kev. Twenty-six new resonances were found. The values of the proton energies, corresponding to these resonances, are given. The reactions were identified by investigating the yield of the positron-active isotopes P^{29} and P^{30}. Nine resonances, apparently, can be attributed to the Si^{30} (p, γ) P^{31} reaction. The remaining resonances have not yet been identified.

Card : 1/1

[illegible], YU. [illegible], [illegible], V. YU., [illegible], [illegible], [illegible], [illegible], [illegible],
TUT[illegible], [illegible], V[illegible]R, A. [illegible]

"Investigation of gamma-Radiation from the Si^{30} (p,γ) P^{31} Reaction,"

Physical Tech. Inst, Acad. Sci. Ukr SSR

Paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101820005-4"

82137

S/058/60/000/02/12/023

24.6520

Translation from: Referativnyy zhurnal, Fizika, 1960, No. 2, pp. 68-69, # 3042

AUTHORS: Tsytko, S. P., Antuf'yev, Yu. P.

TITLE: Gamma-Resonances in the Reactions of Proton Capture by Silicon Isotopes and Energy Levels of the Nucleus

PERIODICAL: Tr. Sessii AN UkrSSR po mirn. ispol'zovaniyu atomn. energii. Kiyev, AN UkrSSR, 1958, pp. 70-76

TEXT: The reaction of the capture of protons by Si isotopes within the range of energies of up to 1 Mev was studied. The monoenergetic protons were obtained in an electrostatic generator with two accelerating tubes, at the exit of which electrostatic and magnetic analyzers were installed. The measurements were carried out with thick and thin targets made of naturel Si and also with thin targets made of separated isotopes. With an accuracy of ± 0.05% the position of 9 resonances was determined on the thick natural target at the proton energies of 695; 717; 753; 775; 801; 831; 895; 940 and 980 kev. In the case of Si^{28} (p, γ)P^{29} reactions not a single resonance was detected. In the case of Si^{29} (p, γ)P^{30} reaction only the resonances observed earlier (Milani, S., Cooper, I. N.,

Card 1/2

S/058/60/000/02/12/023

Gamma-Resonances in the Reactions of Proton Capture by Silicon Isotopes and Energy Levels of the Nucleus

Harris, Phys. Rev., 1955, Vol. 99, p. 645) were detected. On the basis of the data on the γ-resonances of P^{31}, the energy values of the following P^{31} levels were obtained: 7.655; 7.783; 7.898; 7.983; 8.027; 8.049; 8.073; 8.103; 8.165; 8.210; 8.246 Mev.

N. Z.

Card 2/2

S/048/60/024/007/008/011
B019/B060

AUTHORS: Val'ter, A. K., Antuf'yev, Yu. P., Gonchar, V. Yu., L'vov, A. N., Kopanets, Ye. G., Taytko, S. P.

TITLE: A Study of the K^{41} Levels With the Aid of the $Ar^{40}(p,\gamma)K^{41}$ Reaction

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 7, pp. 891-894

TEXT: This is the reproduction of a lecture delivered at the 10th All-Union Conference on Nuclear Spectroscopy held in Moscow from January 19 to 27, 1960. The investigations described were carried out by using an electrostatic precision generator serving for the proton acceleration. The thin Ar^{40} target was prepared in an electromagnetic separator. The excitation function of the reaction was measured by a scintillation counter provided with a CsI(Tl) crystal, a proton current integrator serving for measuring the proton beam hitting the target. Fig. 1 shows the excitation function of the reaction under investigation in the proton energy range

Card 1/2

A Study of the K^{41} Levels With the Aid of the $Ar^{40}(p,\gamma)K^{41}$ Reaction

S/048/60/024/007/008/011
B019/B060

of 1085 - 1130 kev. Resonances were identified at 1092, 1107.5, 1114.5, and 1125 kev proton energies. The most intensive resonances occurred at 1092 kev and 1107.5 kev and their gamma spectrum was investigated. Fig. 2 is a graph depicting the soft and the hard part of the gamma spectrum of resonance at 1107.5 kev. These spectra are thoroughly discussed and the authors suggest a decay scheme of the excited K^{41} levels (Fig. 3), which also indicates the spins for some levels. The authors thank M. I. Guseva for having prepared the targets. There are 3 figures and 12 references: 6 Soviet, 5 US, and 1 Canadian.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Institute of Physics and Technology of the Academy of Sciences UkrSSR)

Card 2/2

S/048/60/024/007/026/032/XX
B019/B056

24.6100

AUTHORS: Antuf'yev, Yu. P., Val'ter, A. K., Gonchar, V. Yu., Kopanets, Ye. G., L'vov, A. N., and Tsytko, S. P.

TITLE: An Investigation of the Levels of the Cl^{35} Nucleus

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 7, pp. 877-883

TEXT: This paper was read at the 10th All-Union Conference on Nuclear Spectroscopy, which took place from January 19 to January 27, 1960 at Moscow. The authors studied the levels and the quantum characteristics of the Cl^{35}-nucleus by means of the reaction $S^{34}(p,\gamma)Cl^{35}$. The excitation function, the spectrum, and the angular distribution of the γ-rays were measured. The investigations of the S^{34} target were carried out by means of a monochromatic proton beam accelerated to 4 Mev in the electrostatic generator of the FTI AS UkrSSR. The γ-rays were recorded by means of a CsI(Tl) crystal. When studying the excitation function, γ-quanta with $E_\gamma > 1.5$ Mev were recorded. In the Table, the proton energies are given.

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An Investigation of the Levels of the Cl^{35} Nucleus

S/048/60/024/007/026/032/XX
B019/B056

at which γ-resonance was observed; also given are the relative intensities of the resonance peaks and the energies of the excited Cl^{35} levels. For the purpose of studying the spectra and the angular distributions of the γ-rays, the authors used a monocrystal scintillation spectrometer. On the basis of the data obtained, the authors suggest the Cl^{35} transition scheme shown in Fig. 5. Resonances in the case of four proton energies (E_p) are discussed in detail. The resonance at E_p = 848 kev corresponds to the 7.196 Mev Cl^{35} level, for which a γ-transition to the 1.22 Mev level occurs with a probability of 95%, and a γ-transition to the ground state of Cl^{35} occurs with a probability of not more than 5%. For the 7.196 Mev level, $1/2^+$ is presumed. The resonance at E_p = 890 kev corresponds to the 7.236 Mev of the level of the Cl^{35}. The γ-spectrum indicates a transition from this level to the ground state. Also transitions to the 1.22-Mev level are possible. For the 7.236-Mev level, $5/2^+$ is assumed. Resonance at E_p = 929 kev corresponds to the 7.274-Mev level, from which transitions to the ground state (70%) and to the 1.22-Mev level (30%) occur. For this level, a spin of 1/2 is assumed, but here a more exact investigation is necessary. The authors carried out preparatory measurements of the spectra

IX

An Investigation of the Levels of the Cl^{35} Nucleus

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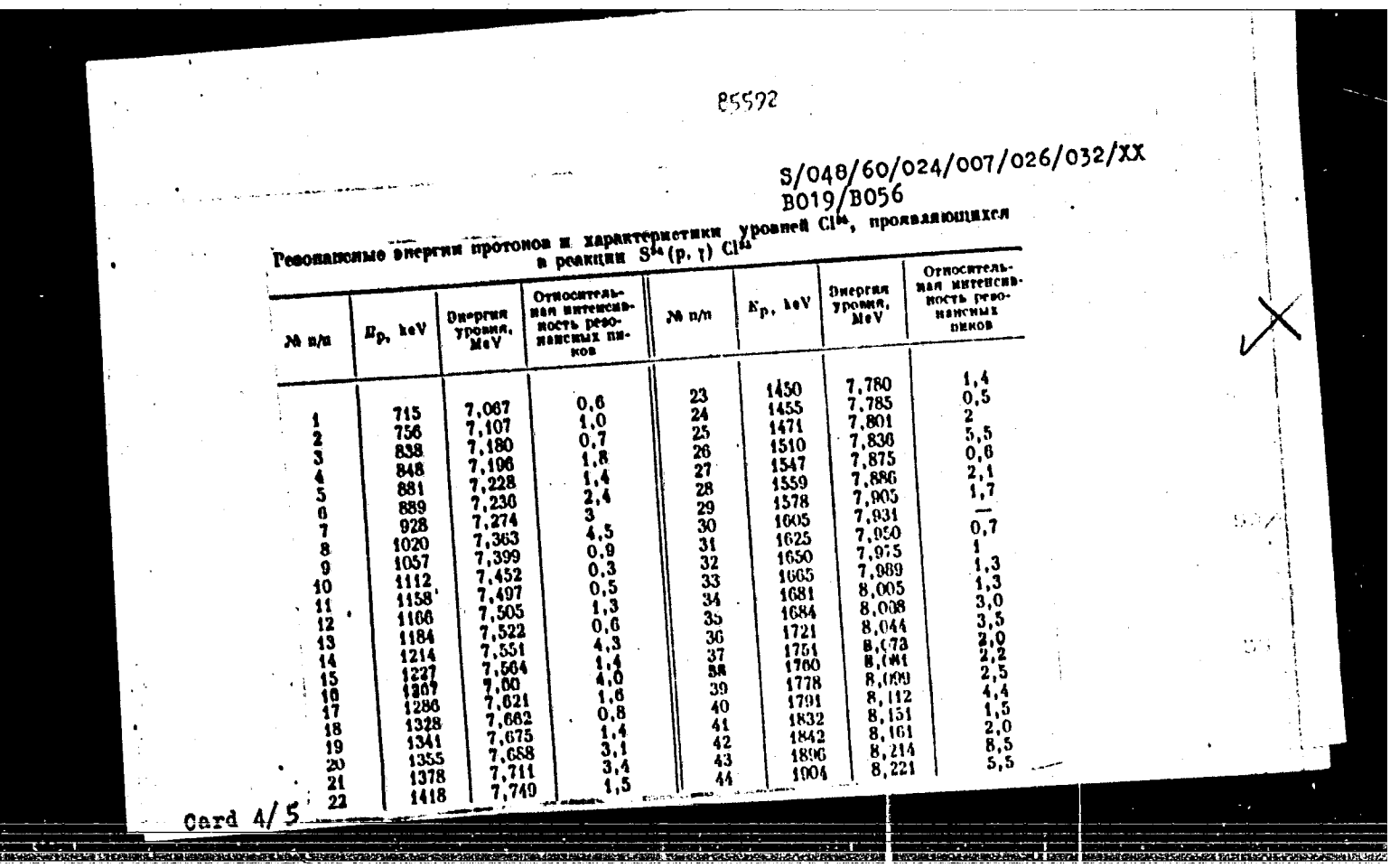
B019/B056

and of angular asymmetry of the γ-rays for the resonances at E_p = 881, 1024, and 1214 kev. By a further investigation of the angular distributions and correlation of the γ-cascade transitions, the problems arising in this connection are expected to be cleared. The authors thank M. I. Guseva for producing the S^{34} target, and A. A. Tsygikalo and Yu. A. Kharchenko for work carried out on the accelerator. There are 5 figures, 1 table, and 8 references: 4 Soviet and 4 US.

ASSOCIATION: Khar'kovskiy fiziko-tekhnicheskiy institut Akademii nauk USSR (Khar'kov Institute of Physics and Technology of the Academy of Sciences, UkrSSR)

Card 3/5



85592

S/048/60/024/007/026/032/XX
B019/B056

Резонансные энергии протонов и характеристики уровней Cl^{34}, проявляющихся в реакции $S^{34}(p, \gamma)Cl^{35}$

№ п/п	E_p, keV	Энергия уровня, MeV	Относительная интенсивность резонансных пиков	№ п/п	E_p, keV	Энергия уровня, MeV	Относительная интенсивность резонансных пиков
1	715	7,067	0,6	23	1450	7,780	1,4
2	756	7,107	1,0	24	1455	7,785	0,5
3	838	7,180	0,7	25	1471	7,801	2
4	848	7,196	1,8	26	1510	7,836	5,5
5	881	7,228	1,4	27	1547	7,875	0,6
6	889	7,230	2,4	28	1559	7,886	2,1
7	928	7,274	3	29	1578	7,905	1,7
8	1020	7,363	4,5	30	1605	7,931	—
9	1057	7,399	0,9	31	1625	7,950	0,7
10	1112	7,452	0,3	32	1650	7,975	1
11	1158	7,497	0,5	33	1665	7,989	1,3
12	1166	7,505	1,3	34	1681	8,005	1,3
13	1184	7,522	0,6	35	1684	8,008	3,0
14	1214	7,551	4,3	36	1721	8,044	3,5
15	1227	7,564	1,4	37	1751	8,073	2,0
16	1267	7,60	4,0	38	1760	8,081	2,2
17	1286	7,621	1,6	39	1778	8,099	2,5
18	1328	7,662	0,8	40	1791	8,112	4,4
19	1341	7,675	1,4	41	1832	8,151	1,5
20	1355	7,688	3,1	42	1842	8,161	2,0
21	1378	7,711	3,4	43	1896	8,214	8,5
22	1418	7,749	1,5	44	1904	8,221	5,5

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An Investigation of the Levels of the Cl^{35} Nucleus

S/048/60/024/007/026/032/XX
B009/B056

at which γ-resonance was observed; also given are the relative intensities of the resonance peaks and the energies of the excited Cl^{35} levels. For the purpose of studying the spectra and the angular distributions of the γ-rays, the authors used a monocrystal scintillation spectrometer. On the basis of the data obtained, the authors suggest the Cl^{35} transition scheme shown in Fig. 5. Resonances in the case of four proton energies (E_p) are discussed in detail. The resonance at E_p = 848 kev corresponds to the 7.196 Mev Cl^{35} level, for which a γ-transition to the 1.22 Mev level occurs with a probability of 95%, and a γ-transition to the ground state of Cl^{35} occurs with a probability of not more than 5%. For the 7.196 Mev level, $1/2^+$ is presumed. The resonance at E_p = 890 kev corresponds to the 7.236 Mev of the level of the Cl^{35}. The γ-spectrum indicates a transition from this level to the ground state. Also transitions to the 1.22-Mev level are possible. For the 7.236-Mev level, $5/2^+$ is assumed. Resonance at E_p = 929 kev corresponds to the 7.274-Mev level, from which transitions to the ground state (70%) and to the 1.22-Mev level (30%) occur. For this level, a spin of 1/2 is assumed, but here a more exact investigation is necessary. The authors carried out preparatory measurements of the spectra

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An Investigation of the Levels of the Cl^{35} Nucleus

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B019/B056

and of angular asymmetry of the γ-rays for the resonances at E_p = 881, 1024, and 1214 kev. By a further investigation of the angular distributions and correlation of the γ-cascade transitions, the problems arising in this connection are expected to be cleared. The authors thank M. I. Guseva for producing the S^{34} target, and A. A. Tsygikalo and Yu. A. Kharchenko for work carried out on the accelerator. There are 5 figures, 1 table, and 8 references: 4 Soviet and 4 US.

ASSOCIATION: Khar'kovskiy fiziko-tekhnicheskiy institut Akademii nauk USSR (Khar'kov Institute of Physics and Technology of the Academy of Sciences, UkrSSR)

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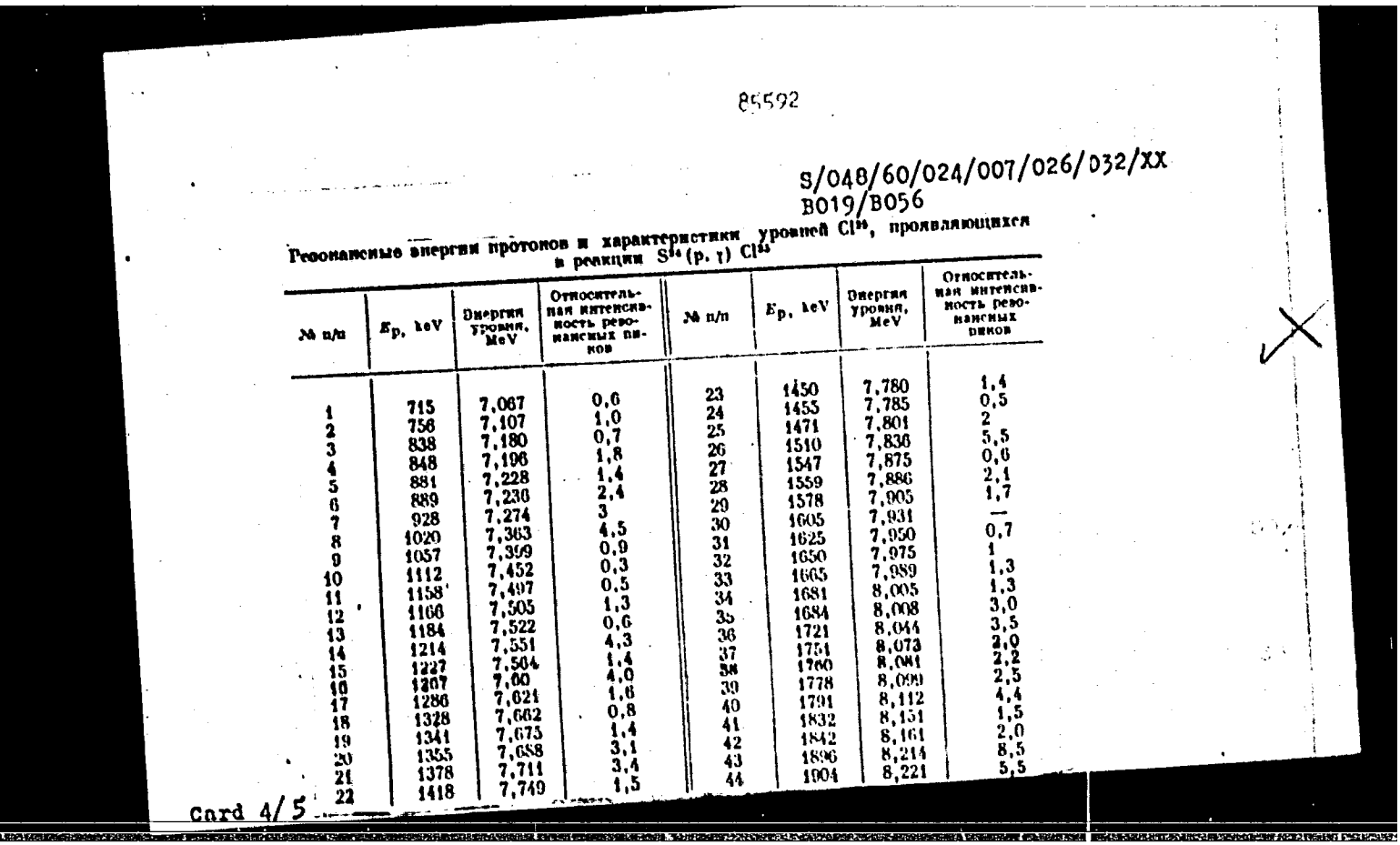

85592

S/048/60/024/007/026/032/XX
B019/B056

Резонансные энергии протонов и характеристики уровней Cl^{35}, проявляющихся в реакции $S^{34}(p, \gamma)Cl^{35}$

№ п/п	E_p, keV	Энергия уровня, MeV	Относительная интенсивность резонансных пиков	№ п/п	E_p, keV	Энергия уровня, MeV	Относительная интенсивность резонансных пиков
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2	756	7,107	1,0	24	1455	7,785	0,5
3	838	7,180	0,7	25	1471	7,801	2
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5	881	7,228	1,4	27	1547	7,875	0,6
6	889	7,236	2,4	28	1559	7,886	2,1
7	928	7,274	3	29	1578	7,905	1,7
8	1020	7,363	4,5	30	1605	7,931	—
9	1057	7,399	0,9	31	1625	7,950	0,7
10	1112	7,452	0,3	32	1650	7,975	1
11	1158	7,497	0,5	33	1665	7,989	1,3
12	1166	7,505	1,3	34	1681	8,005	1,3
13	1184	7,522	0,6	35	1684	8,008	3,0
14	1214	7,551	4,3	36	1721	8,044	3,5
15	1227	7,564	1,4	37	1751	8,073	2,0
16	1307	7,00	4,0	38	1760	8,081	2,2
17	1286	7,021	1,6	39	1778	8,099	2,5
18	1328	7,662	0,8	40	1791	8,112	4,4
19	1341	7,675	1,4	41	1832	8,151	1,5
20	1355	7,688	3,1	42	1842	8,161	2,0
21	1378	7,711	3,4	43	1896	8,214	8,5
22	1418	7,749	1,5	44	1904	8,221	5,5

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S/048/60/024/007/026/032/XX
B019/B056

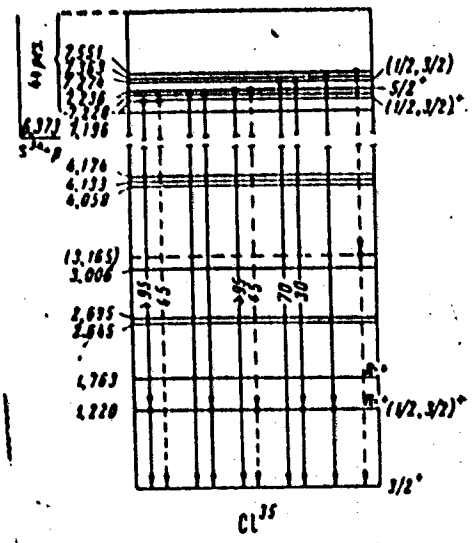

Рис. 5. Схема переходов в Cl^{35}

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S/048/61/025/002/010/016
B117/B212

AUTHORS: Antuf'yev, Yu. P., Gonchar, V. Yu., Kopanets, Ye. G., L'vov, A. N., and Tsytko, S. P.

TITLE: A double-crystal spectrometer and its application in studying (pγ) reactions

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 2, 1961, 261-264

TEXT: The present paper was read at the 11th Annual Conference on Nuclear Spectroscopy (Riga, January 25 to February 2, 1961). The authors describe a double-crystal spectrometer with a universal hookup. This makes it possible to use the unit as a coincidence spectrometer and summation spectrometer. The hookup was designed in the fiziko-tekhnicheskiy institut AN USSR (Institute of Physics and Technology of AS UkrSSR) and was used for one year to investigate a number of (pγ) reactions. Fig. 1 shows the circuit diagram of the unit. Two NaI(Tl) crystals, having a diameter of 70 mm, were used as counters; one of them as 60 mm high, and its energy resolution was 11% for 661-kev gamma rays, the other was 40 mm high, but had an energy

resolution of 14% for gamma rays with the same energy. Besides, 40 mm-high NaI(Tl) crystals with a diameter of 40 mm and a resolution of 9% have been used. The crystals were attached to the photomultiplier of the type ФЭУ-1Б (FEU-1B). The latter was designed by Khlebnikov. The crystals themselves are mounted on a truntable and thus may be adjusted at any angle with respect to each other and the proton beam after modulation the pulses of the ninth dynode of the photomultiplier had a duration of 3 sec and flat peaks. They are amplified by linear amplifiers which have a maximum amplification factor of 100. This amplification may be varied by means of a stepped attenuator. The pulses of the fast-coincidence circuit are emitted from the plates of the photomultiplier. They are modulated by a short circuited delay line (5 mРК-50 (RK-50) cable). Thus, per coincidence circuit a pulse duration of $5 \cdot 10^{-8}$ sec is obtained. A tube of the type 6А3П (6A3P) has been used for the coincidence circuit. The discharge of the latter starts the multivibrator which generates the driving pulse that is transmitted to the pulse-height analyzer of the type АИ-100-1 (AI-100-1). Such a circuit has been described in Ref. 3. The output of the second linear amplifier is fed to the input of the pulse-height analyzer via the limiter and an additional amplifier with an amplification factor of 5. The ana-

S/048/61/025/002/010/016
B117/B212

lyzer is opened in the case of synchronized pulses of both photomultipliers. After leaving the linear amplifier the pulses have a specific height. A pulse can be transmitted from the photomultiplier via this amplifier which controls the scanning of the electron-beam tube. In this case, a coincidence spectrum is obtained from the other photomultiplier in which part of the total gamma-ray spectrum is separated. It is also possible to transmit a pulse which is equal to the sum of the pulses in both photomultipliers. In this case, a gamma spectrum is obtained in which the sum of the radiation energy attains the given value. In order to illustrate the operation of a spectrometer, test results for a constant Co^{60} source and for a nuclear reaction of $Al^{27}(p\gamma)Si^{28}$ are discussed. Within $\pm$ 15%, the experimental data for the first case agree with the calculated values. For the second case, a much more accurate spectrum has been obtained than with a single-crystal spectrometer. The circuit diagram of the spectrometer may also be used for a Compton spectrometer, and the pulse-height analyzer is also opened by a pulse of a Compton gamma quantum scattered through a certain angle. In addition, it may also be used as spectrometer for total absorption, if the circuit is closed at the presence of a scattered quantum. Apart from the feeding tubes, the circuit consists of 28 more tubes. There are 3 figures

A double-crystal ...

and 3 references.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Institute of Physics and Technology of the Academy of Sciences UkrSSR)

Legend to Figure 1: 1) pulse forming blocks; 2) cathode followers; 3) coincidence circuits; 4) composition scheme; 5) linear amplifier; 6) blocking generators; 7) multivibrator.

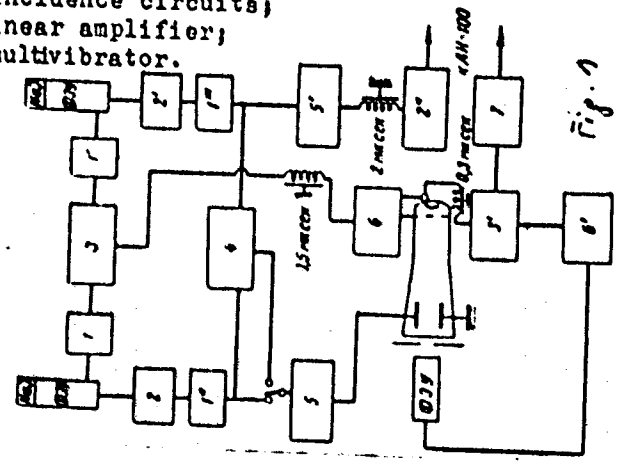

Fig. 1

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S/048/61/025/002/011/016
B117/B212

AUTHORS: Antuf'yev, Yu. P., Val'ter, A. K., Gonchar, V. Yu., Kopanets, Ye. G., L'vov, A. N., and Taytko, S. P.

TITLE: Radiative proton capture by the S^{34} isotope

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 2, 1961, 265-269

TEXT: The present paper was read at the 11th Annual Conference on Nuclear Spectroscopy (Riga, January 25 to February 2, 1961). The authors have investigated the radiative proton capture by S^{34} at a 1214-kev resonance energy. The gamma spectra were analyzed by means of a single-crystal spectrometer, a coincidence spectrometer, and a summation spectrometer. Based on the values obtained, the authors state that the transition of the 7.5-Mev resonance level proceeds only cascade-like over an intermediate level. The energies of the gamma rays in the cascade are 3.17 and 4.38 Mev. A direct transition to the ground state may have a relative intensity of less than 0.5%. The angular distribution of gamma rays was measured for rays with 4.38 Mev and 3.17 Mev at an angular interval of 0-150 degrees on both sides

Card 1/3

of the proton beam. Test data and calculated data were intercompared. They were in best agreement when the spins of the resonance- and intermediate levels were equal to 7/2. The value of the gamma-gamma correlation, measured with the summation spectrometer, corresponds (within the limit of error) to the calculated value, which fact confirms a spin of 7/2. An analysis of the relative transition probability from the resonance level to the ground state and the intermediate state with a spin of $3/2^+$ and $7/2^+$, respectively, leads to the conclusion that the parity of the resonance and intermediate levels must be negative, and that the transition from the resonance level to the ground state must be -M2. The presence of one more level with the spin $7/2^-$ near 7.55 Mev, which corresponds to a resonance level, cannot be explained by single-body excitation on a shell- or generalized model. It may be assumed therefore that this level corresponds to a two-body excitation. A comparison of the values obtained experimentally for the width of the resonance level with those calculated according to a single-body model confirmed this assumption. The authors determined the absolute yield of gamma rays from a thick S^{34} target and found it to be $2.56 \cdot 10^{-9} \pm 15\%$ per each proton decay. The authors thank M. I. Guseva for preparing the isotopic targets, A. A. Tsygikalo, Yu. A. Kharchenko, and the personnel of the

electrostatic generator for the smooth operation of the latter. There are 5 figures and 5 references: 4 Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Institute of Physics and Technology of the Academy of Sciences UkrSSR)

Card 3/3

VAL'TER, A.K.; TSYTKO, S.P.; ANTUF'YEV, Yu.P.; KOPANETS, Ye.G.; L'VOV, A.N.

Studying the levels of P^{31} by the aid of the $Si^{30}(p,\gamma)P^{31}$ reaction. Izv. AN SSSR. Ser. fiz. 25 no.7:854-861 Jl '61. (MIRA 14:7)

Fiziko-tekhnicheskiy institut AN USSR.
(Phosphorus--Isotopes) (Silicon--Isotopes)
(Nuclear reactions)

VAL'TER, A.K.; ANTUF'YEV, Yu.P.; KOPANETS, Ye.G.; L'VOV, A.N.; TSYTKO, S.P.

Quantum characteristics of the 6.847 Me. level of P^{30} observed in the reaction $Si^{29}(p,\gamma)P^{30}$. Zhur. eksp. i teor. fiz. 41 no.5:1449-1453 N '61. (MIRA 14:12)

1. Fiziko-tekhnicheskiy institut AN Ukrainskoy SSR.
(Nuclear reactions) (Phosphorus)
(Silicon—Isotopes)

S/048/62/026/009/003/011
B125/B186

AUTHORS: Val'ter, A. K., Antuf'yev, Yu. P., Kopanets, Ye. G., L'vov, A. B., and Tsytko, S. P.

TITLE: Decay scheme of the 8.9-Mev state and quantum characteristics of the lower levels of the K^{41} nucleus

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 9, 1962, 1137-1142

TEXT: In continuation of an earlier paper by A. K. Val'ter et al. (Izv. AN SSSR, Ser. fiz., 24, no. 7, 891 (1960) on the reaction $Ar^{40}(p,\gamma)$ the 1107.5 kev resonance is studied. The proton beam from the electrostatic generator of the FTI AN USSR was made to strike the target through a collimating system. Ar^{40} ions were "knocked" into the tantalum backing of such targets. Fig. 1 shows the hard part of the spectrum taken by a γ-spectrometer with an NaI(Tl) crystal. The peaks K, A, B, C, and D of the soft part are at 0.5; 0.6; 1.0; 1.3, and 1.6 Mev. The spectrum of Fig. 3 was taken by a coincidence spectrometer with two crystals. The

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S/048/62/026/009/003/011
B125/B186

Decay scheme of the 8.92-Mev ...

lines A, B, C, D coincide with the hard part of the spectrum. The anisotropy $a = (W(90^\circ)-W(0^\circ))/W(90^\circ)$ of the angular distribution of the γ-rays at 7.9; 7.3; 6.3; 1.6 and 1.0 Mev is 0.48; -0.54; +0.14 and +0.05, respectively. There is no transition between the 8.92-Mev resonance level and the ground state. Most of the transitions coming from the resonance level have the same probability. The 2.6-Mev state passes to the ground state rather indirectly over the 1.6-Mev level or over the 1.6-Mev level. The line intensity ratio $I_D/I_A \simeq 1$ remains almost constant from E_p = 0.0 to E_p = 6.8. Then it decreases rapidly to ~0.2 with E_p ~6.8 and ~0.16 with E_p ~7.6 Mev. The levels with 1.0 and 1.5; 1.6 and 2.6 Mev are formed according to the scheme of Hillman S. P., Danske Mat. fys. Medd., 29, No 16 (1955) by single-particle excitation when an unpaired proton passes onto states with $1/2^-$, $7/2^-$, $3/2^-$ and $5/2^-$. The 8.92-Mev resonance level occure when a proton in the state $g_{9/2}$ with $\Omega = 3/2^+$ is captured. For the levels 1.0; 1.6; 6 and 8.82 Mev the spins and parities $1/2^-$, $3/2^-$, $5/2^-$, and $3/2^-$ are the most probable. These values are also compatible with the shell model having a strong jj-coupling. There are 6 figures and 2 tables.

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Decay scheme of the 0.9?-Mev ...

S/048/62/026/009/003/011
B125/B186

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Physicotechnical Institute of the Academy of Sciences UkrSSR)

Fig. 1. γ-ray spectrum studied with a "single-crystal" spectrometer (hard part).

Fig. 3. γ-ray spectrum studied with the aid of a "summing" spectrometer.
Fig. 5. Scheme of the levels of the K^{41} nucleus
Table 2. Possible values of the level spins.

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Decay scheme of the 6.92-ev ...

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B125/B186

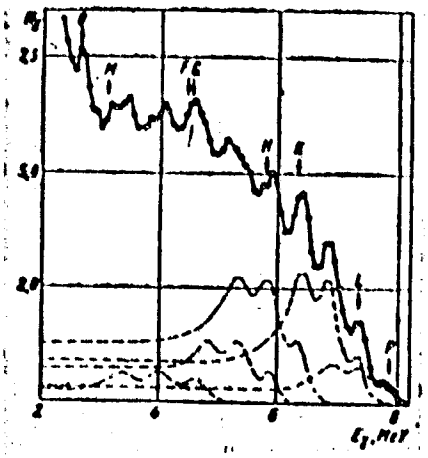
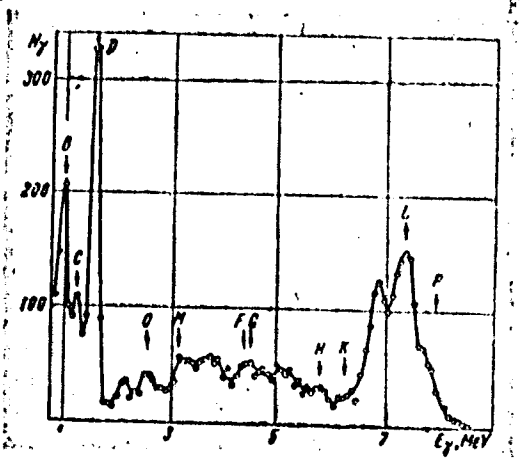


Fig. 1

Fig. 3



Card 4/6

Dec[illegible] of the 8.92-Mev ...

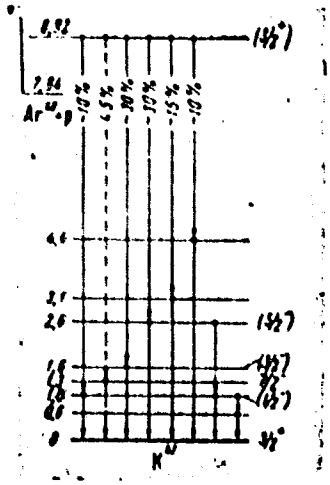


Fig. 5

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B125/B186

Table 2

$I_{par}=1/2$							$I_{par}=3/2$						
E*, MeV	I			$\delta^2=\frac{I_{L=2}}{I_{L=1}}$			E*, MeV	I			$\delta^2=\frac{I_{L=2}}{I_{L=1}}$		
1,0	1/2	—	3/2	0,03	—	0	1,0	3/2	—	7/2	0,04	—	0
1,8	1/2	3/2	3/2	0	0,01	—	1,8	3/2	5/2	7/2	0	0,03	0,1
2,6						0,09	2,6			7/2		—	0,03

Card 6/6

S/056/62/042/002/013/055
B102/B138

AUTHORS: Antuf'yev, Yu. P., Val'ter, A. K., L'vov, A. N., Kopanets, Ye. G., Tsytko, S. P.

TITLE: Investigation of the resonances in the reaction $Si^{29}(p,\gamma)P^{30}$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 386-391

TEXT: The relative gamma quantum yield of the reaction $Si^{29}(p,\gamma)P^{30}$ was measured in the range $1.3 \leq E_p \leq 1.55$ Mev. Of the five resonances detected, those at E_p = 1375 and 1500 kev were studied in detail, the others were at 1308, 1330, and 1470 kev. For the 1375-kev resonance, related to the 6.892-Mev level of the P^{30} nucleus and the 1500-kev resonance (7.014-Mev level), the spectra and the gamma-quantum angular distributions were determined. The parameters of the gamma lines of these spectra were determined numerically and the decay schemes (Figs. 5, 6) are given. For the most intense line (6.20 Mev) of the 1375-kev resonance spectrum the angular asymmetry of the angular distribution $W = 1 + A\cos^2\vartheta$ (dipole

Card 1/3

γ-transition) was measured as $A = [W(0^\circ) - W(90^\circ)]/W(90^\circ) = -0.63 \pm 0.05$. The corresponding value, $A = 1.07 \pm 0.10$ was measured for the most intense gamma line (2.83 kev) of the 1500-kev resonance spectrum. The values of the level parameters J^π and T are discussed. There are 6 figures, 3 tables, and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: P. M. Endt et al. Phys. Rev. 95, 580, 1954; C. Van der Leun, P. M. Endt. Phys. Rev. 110, 89, 1958.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physicotechnical Institute of the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: August 17, 1961

Figs. 5 and 6. Decay schemes and gamma transitions from the resonance levels 6.892 and 7.014 kev, respectively.

ANTUF'YEV, Yu.P.; EL'-SHESHENI, M.M.; SOAD, Kh.R.; SALCH, Z.A.; SOROKIN, P.V.

Study of the reaction $Li^6(d,\alpha)He^4$ at deuteron energies ranging from 1 to 2.5 Mev. Izv. AN SSSR. Ser. fiz. 27 no.11:1451-1455 N '63. (MIRA 16:11)

ANTUF'YEV, Yu.P.; SOROKIN, P.V.

Circuit for dividing the working range of the AI-100-1 analyzer into two subgroups of 50 channels each. Prib. i tekh. eksp. 9 no.3:79-80 My-Je '64 (MIRA 18:1)

ABUZEYD, M.A.; ALI, F.M.; ANTUF'YEV, Yu.P.; BARANIK, A.T.; NUER, T.M.; SOROKIN, P.V.

Studying the reaction $Al^{27}(p,\gamma_0)Mg^{24}$ in the proton energy range 1 - 2.5 Mev. Izv. AN SSSR. Ser. fiz. 28 no.1:46-50 Ja '64. (MIRA 17:1)

1. Yegipetskaya atomnaya komissiya, Kair, Ob"yedinennaya Arabskaya Respublika.

ACCESSION NR: AP4019200 S/0056/64/046/002/0409/0414

AUTHORS: Antuf'yev, Yu. P.; Bunduk, T.; Fikri, A.; Machali, F.; Sorokin, P. V..

TITLE: Investigation of the $Li^7(p, \alpha)He^4$ reaction induced by polarized protons with energy 0.5--2 MeV

SOURCE: Zhurnal eksper. i teor. fiz., v. 46, no. 2, 1964, 409-414

TOPIC TAGS: lithium 7, helium 4, proton Alpha reaction, proton polarization, sensitivity to proton polarization, elastic proton scattering, left right asymmetry

ABSTRACT: The sensitivity of the $Li^7(p,\alpha)He^4$ reaction to proton polarization, defined as the ratio of anisotropic component of the reaction cross section to isotropic component, was measured using polarized protons obtained from the elastic scattering reaction $C^{12}(p,p)C^{12}$ at a 60° angle. The sensitivity Σ was determined from

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ACCESSION NR: AP4019200

the left-right asymmetry R, defined as the ratio of the counter readings in positions 7 and 8, respectively (Fig. 1), using the relation

$$R = (1 + P_1 r)/(1 - P_1 r),$$

where P_1 is the polarization of the elastically scattered protons. At low energies and at an angle of 45° the sensitivity does not exceed 10%, but rises smoothly to 60% at 2 MeV with increasing proton energy. The results are in good agreement with those of L. Wolfenstein (Phys. Rev. v. 75, 1664, 1949) at 225° phase shift and of K. Bearpark et al (Nucl. Phys. v. 33, 648, 1962). "The authors are indebted to Prof. El-Nadi for collaboration in the work. We are grateful to A. M. El-Nashar, G. F. Kirshin, to Mustafa Raga for help with the experiments, and to G. Akseneva for help in preparing the article for publication." Orig. art. has: 5 figures, 3 formulas, and 1 table.

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ANTUF'YEV, Yu. P.; BEDEVI, O. Ye.; EL'-NADI, L. M.; DARVISH, D.A. Ye.; SOROKIN, P. V.

"Energy Levels of the Nucleus Si^{28}."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

KhFTI (UkrainianPhysico Technical Inst, Khar'kov)

A..ZHID, M. A.; ANTUF'YEV, Yu. P.; BARANIK, A. T.; EL'-ZAYKI, M. I., NUER, T. M.; ..OROKIN, P. V.

"Investigations of the Reaction $Al^{27}(d,\alpha)Mg^{25}$ at Deuteron Energies 1.5 - 2.5 MeV. Dependence of the Intensity of Alpha Groups on the Spin of Levels of the Final Nucleus Mg^{25}."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

KhFTI (Ukrainian Physico Technical Inst, Khar'kov)

AP4010289 S/0048/64/028/001/0046/0050

AUTHOR: Abuseyd, M. A.; Ali, F. M.; Antuf'yov, Yu. P.; Baranik, A. T.; Nuor, T.M.; Sorokin, P. V.

TITLE: Investigation of the $Al^{27}(p,\alpha_0)Mg^{24}$ reaction in the 1 to 2.5 MeV proton energy range /Report, Thirteenth Annual Conference on Nuclear Spectroscopy held in Kiev, 25 Jan to 2 Feb 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.1, 1964, 46-50

TOPIC TAGS: proton reaction, aluminum 27, magnesium 24, silicon 28, proton reaction cross section, proton scattering, angular distribution, compound nucleus, nuclear resonance, spin assignment

ABSTRACT: Although the $Al^{27}(p,\alpha_0)Mg^{24}$ reaction (Q = 1.59 MeV) has been investigated by different authors at a number of different proton energies, the data for the 1 to 2.5 MeV energy interval are scanty. For this region, only the excitation function (F.C.Shoemaker et al, Phys.Rev.,83,1011,1951) is known, and this was measured under conditions of poor energy resolution. The present paper gives the results of measuring the cross section for the reaction and the angular distribution of α_0 par-

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ticles for 13 resonances in the proton energy range from 1 to 2.5 MeV. The experimental data were analyzed to determine the "strength" of the resonances, and the spin and parity of the 1.184 and 1.363 MeV levels of the compound Si^{28} nucleus. The protons were accelerated by the electrostatic accelerator of the Commission of Atomic Energy of the United Arab Republic (Cairo). The energy spread in the collimated beam was 0.2%. The beam current was measured by means of a Faraday cup and an Elcor Model A-30-9A current integrator. The secondary electrons were suppressed by a 300 V potential applied to the guard ring at the entrance to the Faraday cup. The unsupported Al^{27} targets, which varied in thickness from 20 to 50 mg/cm^2, were prepared by vacuum evaporation. The energy losses for 1 MeV protons in such targets equals 3 to 7 keV. The reaction products were detected by two semiconductor detectors of the ORTEC-100A-40 type. One of these, with a solid angle of 2.1×10^{-3} sterad, was mounted at an angle of 135° to the beam and served as the monitor. The second detector could be rotated about the target in an angular range from 30 to 150° in the laboratory system. The effective solid angle of the rotatable counter was 1.9×10^{-3} sterad. The pulses from the semiconductor detector were amplified by three amplifiers built in the laboratory and also by Dynatron Radio Ltd. type 1430A amplifiers. The pulse spectra were analyzed by means of integral discriminators of the Dynatron Radio Ltd. 100-9E type or by a 100 channel AI-100 pulse height analyz-

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or. The energy resolution of the detecting equipment was 2% for Po^{210} α-particles. The experimental results are presented in the form of the excitation function for 150° scattering (cross section versus proton energy) and experimental angular distribution curves. A brief analysis of the results is given. The spins and parities of the 1.184 and 1.363 MeV levels of the compound Si^{28} nucleus were evaluated with the aid of the data obtained in studying the $Al^{27}(p,\gamma)$ reaction (Yu.P.Antuf'yeva et al, Private communication). It is noted that in view of the fact that α-particles and the ground state of Mg^{24} have isotopic spins T = 0, the levels of the compound nucleus Si^{28} evinced in the investigated reaction must also have T = 0. "The authors are grateful to M.El-Nadi for his assistance and interest in the work, and also express their gratitude to the technical group operating the accelerator." Orig. art.has: 2 formulag, 2 tables, and 2 figures.

ASSOCIATION: Egipetskaya atomnaya komissiya, Kair, Ob"yedinennaya Arabskaya Respublika (Egyptian Atomic Commission, Cairo, United Arab Republic)

SUBMITTED: oo DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: NS NR REF SOV: 001 OTHER: 006

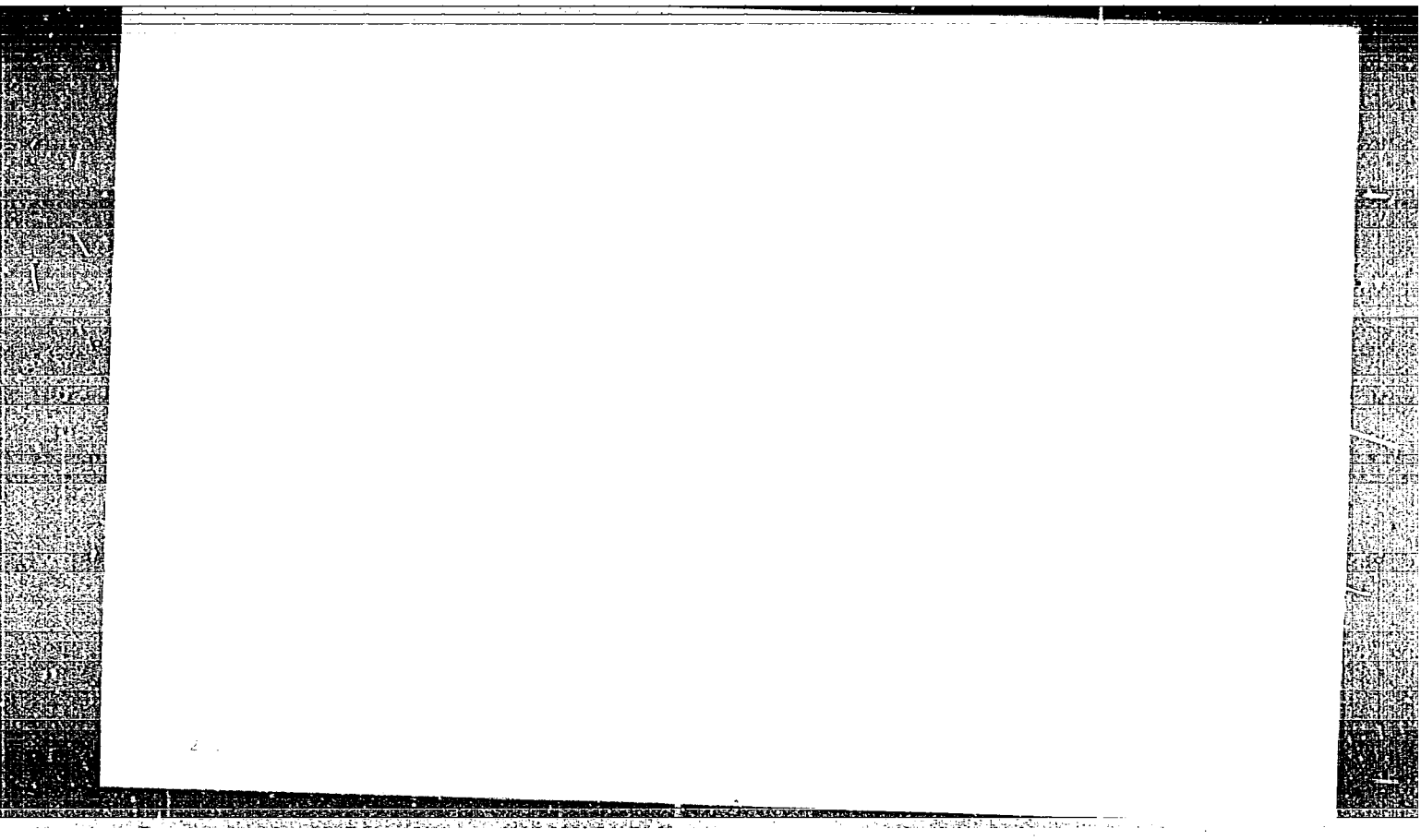
Card 3/3

ANTUF'YEV, Yu.P.; BEDEVI, O. Ye. [Badawy, O.E.]; EL'-NADI, L.M.; DARVISH, D.A. Ye. [Derwish, D.A.E.]; SOROKIN, P.V.

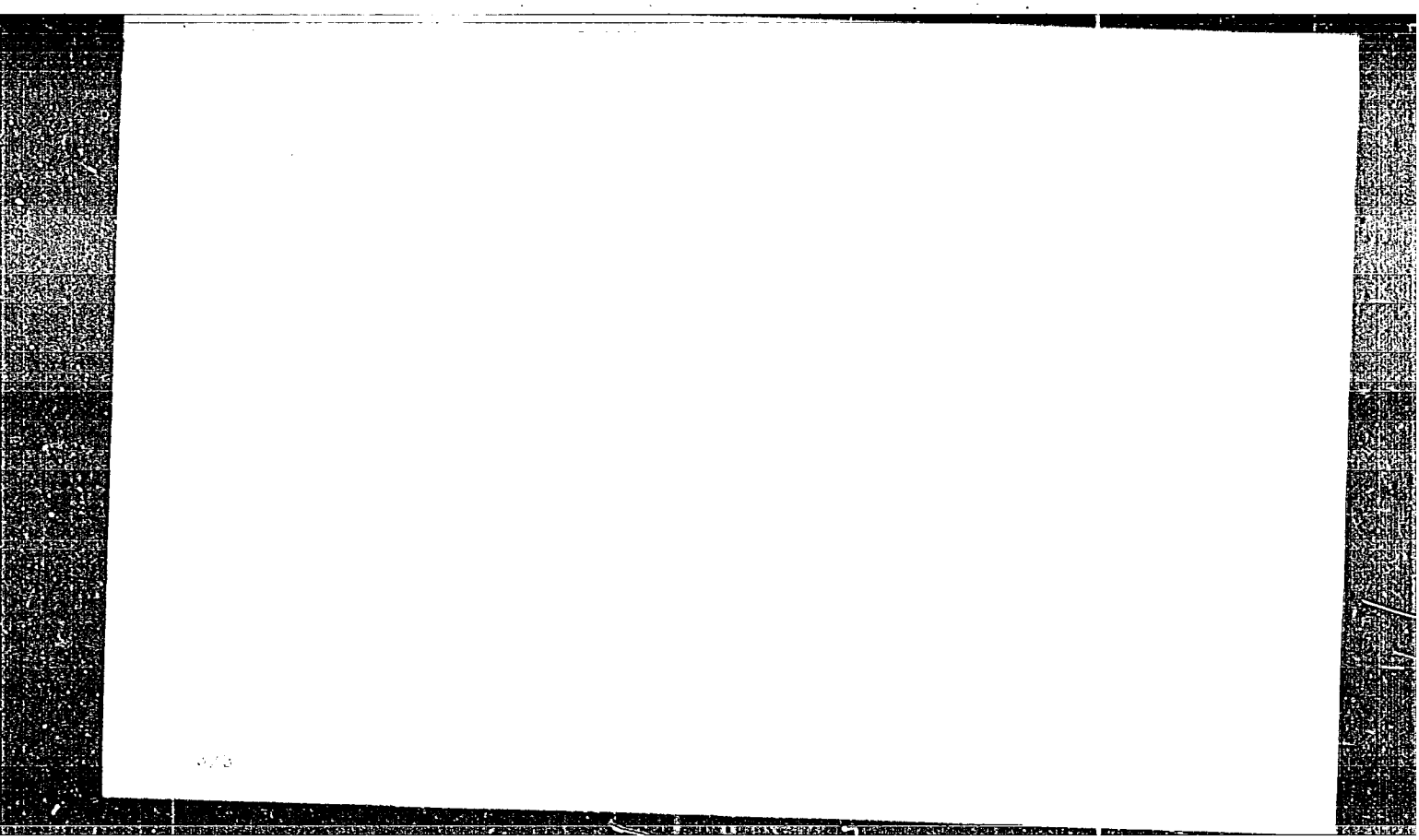
Energy levels of the Si^{28} nucleus. Izv. AN SSSR. Ser. fiz. 28 no.7:1156-1159 Jl '64 (MIRA 17:8)

1. Otdeleniye yadernoy fiziki Atomnoy komissii Ob"yedinennoy Arabskoy Respubliki, Yegipet, Kair, i Fiziko-tekhnicheskiy institut AN UkrSSR.

distinguished, corresponding to ten Mg^{26} levels. The angular distributions of the



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101820005-4"



ANTUF'YEV, Yu.P.; BUNDUK, T.; [illegible]RI, A.; MACHALI, F.; SOROKIN, P.V.

Study on the reaction Li^7 (p, α)He^4 induced by 0.5 - 2 Mev. polarized protons. Zhur. eksp. i teor. fiz. 46 no.2:409-414 F '64. (MIRA 17:9)

ABDELYD, M.A., [illegible], Yu.I., [illegible], M.I., NOVIK, T.M., SOROKIN, P.V.

Study of the $Al^{27}(d,\alpha)Mg^{25}$ reaction at deuteron energies of 1.5- 2.6 Mev. Dependence of the α_5-group intensity on the spin of the final state of Mg^{25}. Izv. AN SSSR. Ser. fiz. 28 no.10:1717-1720 O '64. (MIRA 17:12)

L 32968-66 EAT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AT6015897 (N) SOURCE CODE: UR/0000/65/000/000/0100/0102

AUTHOR: Antuf'yeva, R. N.; Svechkarev, I. V.

ORG: Physico-Technical Institute for Low Temperatures, AN UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Lattice periodicity of indium alloyed with gallium

SOURCE: AN UkrSSR. Issledovaniye energeticheskogo spektra elektronov v metallakh (Study of the energy spectrum of electrons in metals). Kiev, Izd-vo Naukova dumka, 1965, 100-102

TOPIC TAGS: indium alloy, crystal lattice parameter, semiconductor theory, electron donor, Brillouin zone, metal physics, gallium

ABSTRACT: X-ray lattice parameter measurements on indium-gallium alloys (to 2.5 at % Ga) were made. For the face-centered tetragonal structure, the c/a ratio increased from 1.0745 Å to 1.0770 Å for 2.5 at % Ga. The parameter 'a' decreased from 4.597 Å to 4.590 Å, while the parameter 'c' remained constant at 4.940 Å. The 'compressive' effect of gallium on the indium lattice is typical of donor impurities, while the opposite is true of acceptor impurities such as Li, Mg, Cd and Hg. Gallium decreased the energy gap and increased the filling of corner states in the Brillouin zones. A comparison was made with thallium--an isovalent impurity, known to change the local electron

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ACC NR: AT6015097

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concentrations in the corners of the third zones. For equivalent numerical o/a changes with opposite signs (Ga--$+1.1\cdot10^{3}$ and Th-- $-1.1\cdot10^{3}$), the changes in energy gaps depended not so much on the changes in the volume of the lattices as on the ionic potentials of the impurities. The change in energy gap with pressure was calculated ($\partial E_g/\partial P = -1.3\cdot10^{-6}$ ev/atm) from the dependence $o/a = f(Z)$ and the known density of states of indium, which compared well with the same values for semiconductors. Orig. art. has: 1 figure, 1 table.

SUB CODE: 20,11/ SUBM DATE: 12Nov64/ ORIG REF: 006/ OTH REF: 006

Card 2/2

ANTUKOV, N.M.

Flask manipulator with a 4-ton lifting capacity. Sbor. st. NIITIAZHMASHa Uralmashzavoda no.9:48-64 '65. (MIRA 18:8)

AMTULA, J.

Use of transistors. p. 62. (ESCHAD, Vol. 10, No. 1, 1955.)

SO: Monthly List of East European Accessions. (EEAI, LC, Vol 4, No. 6, June 1955, Uncl.

MITIA, V.

Physical basis for transistor electronics. p. 553.
TEHNIKA, Beograd, Vol. 10, no. 4, 1955.

SO: Monthly list of East European Accessions, (EEAI), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

YUGOSLAVIA

Aleksandar ROTOVIC and Ljubica ANTIC-JOVANOVIC, Department of Physical Medicine and Rehabilitation of Medical Academy of the University (Institut za fizikalno medicinu i rehabilitaciju Medicinskog fakulteta Univerziteta, Head (Upravnik) Prof Dr Aleksandar ROTOVIC, Belgrade.

"Coagulability of Serum Proteins in Patients with Benign and Malignant Tumors."

Belgrade, Srpski arhiv za celokupno lekarstvo, Vol 90, No 10, Oct 62; pp 961-970

[English summary modified]: Study with previously described [illegible] technic in 153 patients, whereof 131 with clinically verified malignancies; among these, 32 had normal coagulability, 83 lowered and 16 increased. Most pronounced decrease was in respiratory tract tumors; multiple myeloma had sharply increased values, lymphogranulomatosis varied from very high to very low, apparently according to stage of disease. Three tables; 5 Yugoslav and 22 Western references.
[7]

ANTON ILIC

Intra-aural approach in trepanation. Voj. san. progl., Beogr. 14 no.5: 280-283 May 57.

1. Otorinolaringoloska klinika VMA.
(CRANIUM, surg.
trepanation, intra-aural approach (Ser))

"The use of telephone-telegraph communications." p. 77. (Vojni Glasnik. Vol. 7, no. 7, July 1953. Beograd.)

SO: Monthly List of East European Accessions. Vol. 3, no. 3. Library of Congress. March 1954. Uncl.

ANTUHKOV, P.

Treatment of terminal conditions by intra-arterial blood transfusion and other methods of reamination. Khirurgiia, Sofia 7 no. 5:311-313 1954.

(RESUSCITATION,
intra -arterial blood transfusion & other technics)
(BLOOD TRANSFUSION,
intra-arterial in resuscitation)

ANTUNOVIC-KOBLISKA, Milovan, inz., prof.

The 4th International Meeting of the International Bureau of Geophysics; Leipzig, 1962. Rudar glasnik no.1:78-80 '63.

1. Rudarsko-geoloski fakultet, Beograd.

ANTUNCVIC Kobliska, M., prof. ing.

Fifth International Meeting of the International Bureau for Rock Mechanics, Leipzig, 1963. Rudar glasnik 1 102-103 '64.

"Mining machines" by Tadeusz Kubiczek. Reviewed by M. Antunovic Kobliska. Ibid.:104.

1. Mining and Geological Faculty of the University of Belgrade.

BORDOSKI, Marko, Dr.; ANTUNOVIC-MIKACIC, Smilja, dr.; DIMIC, Mileva, dr.

Leptospirosis in Serbia. Higijena, Beogr. 7 no.1-4:118-125 1955.

1. Higijenski institut NRS, Beograd.
(LEPTOSPIROSIS, epidemiol.
in Yugosl. (Ser))

ANTUNOVIC-MIKACIC, S.

Microbiological diagnosis of leptospirosis. Attempted standardization of routine diagnosis. Higijena 12 no.1:68-82 '60.

1. Pokusaji standardizacije rutinsko dijagnostike.
(LEPTOSPIROSIS diag)

ANTUNOVIC-MIKACIC, S.

Recent epidemiological problems in leptospirosis. Higijena, Beogr. 12 no.4:388-406 '60.
(LEPTOSPIROSIS epidemiol)

MAMBISH, I.Ye., kand.tekhn.nauk; PERTSOVSKIY, Ye.S., nauchnyy sotrudnik; RYBKINA, A.A., nauchnyy sotrudnik; TARASEVICH, B.V., nauchnyy sotrudnik; ZIBEL', B.Ya., byvshiy nauchnyy sotrudnik, kand.tekhn.nauk; ANTUSEVICH, F.P.; RYABEN'KAYA, N.K., inzh.; MELESHKO, L.N.; OKL'MAN, D.Ya., red.; CHERNYSHEVA, V.A., red.; GOLUBKOVA, L.A., tekhn.red.

[A method for accelerated determination of moisture in newly harvested wheat and rye] Metod uskorennogo opredeleniia vlazhnosti svyrogo zerna pshenitsy i rzhi. Izd. 2-oe, dop. Moskva, Izd-vo tekhn.i ekon. lit-ry po voprosam mukomol'no-krupianoi, kombikormovoi promyshl. i elevatorno-skladskogo khoziaistva, 1957. 66 p. (MIRA 11:2)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki. 2. Opytnaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta zerna i produktov yego pererabotki pri Biyskom elevatore (for Zibel'). 3. Starshiy inspektor punkta Gosudarstvennoy khlebnoy inspektsii v Biyske (for Antusevich). 4. Zaveduyushchiy laboratoriey Biyskogo elevatora (for Ryaben'kaya) 5. Zamestitel' zaveduyushchego laboratoriey Biyskogo elevatora (for Meleshko).

(Wheat--Analysis) (Rye--Analysis)

STARODANOVA, L.; ANTUSHEVA, P., bukhgalter

Our customers are workers of the Ural Electric Apparatus Factory. Obshchestv. pit. no.9:8-9 S '58. (MIRA 11:10)

1. Direktor stolovoy No.40 Vtorogo Sverdlovskogo tresta (for Starodanova).
(Sverdlovsk--Restaurants, lunchrooms, etc.)

STEPANOV, Ye.M.; ANDRIYEV, M.N.; OSHAROVA, Ye.A.; GERASIMOVA, S.A.; ANTUSHEVA, R.I.; TUROVA, R.I.

Effect of different feeding levels on the physiological condition of the organism of sheep. Trudy VIEV 26:190-192 '62.

(MIRA 16:2)

1. Laboratoriya fiziologii Vsesoyuznogo instituta eksperimental'noy veterinarii.

(Sheep—Feeding and feeds)

S/503/62/014/000/005/007
I023/I223

AUTHORS: Karimov, M.G. and Antushevich, M.I.

TITLE: Flare and emission lines of the solar corona

PERIODICAL: Akademiya nauk Kazakhskoy SSR. Astrofizicheskiy Institut. Izvestiya. v.14. 1962, 86-92

TEXT: The simultaneous recording of a flare and of corona emission lines can clarify the problem of matter transfer from the chromosphere to the corona. The simultaneous appearance of a flare and Sun spots near the edge together with corona emission lines is very rare; during many months of observation only one case was registered. In another case emission lines together with

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S/503/62/014/000/005/007
I023/I223

Flare and emission lines...

Sun spots (without flares) were observed. The emission lines were photographed by means of spectrograph having a dispersion of 7Å/mm. The flares were photographed with a chromospheric - photospheric telescope of type AFP-2 (AFR-2). The two cases recorded are analyzed in great detail. The conclusions reached are: 1) The yellow corona line of wavelength 5694Å appears brighter in the neighbourhood of a flare; it is at a distance of 8-10° from the spot and occupies a larger area than the Sun spot; 2) In some cases lines of different ionization potentials can coexist. There are 7 figures and 1 table.

Card 2/2

S/503/62/014/000/006/007
I023/I223

AUTHORS: Karimov, M.G., Zubtsov, A.S., Antushevich, M.I. and Dosybayev, S.K.

TITLE: Photometry of solar flares

PERIODICAL: Akademiya nauk Kazakhskoy SSR. Astrofizicheskiy institut. Izvestiya. v.14. 1962, 93-106

TEXT: Results concerning the photometry of flares of intensity ≥ 2, observed from October 1957 till the end of 1959, are presented. The observation were done at a height of 2600 m by means of a chromospheric-photospheric telescope of type АФР-2 (AFR-2). The line H_α was photographed thrqugh an interference-polarization filter with bandwidth of 0.6A on a stnndart, 35-mm

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